APPLICATION WITH CORRECTIONS APPLIED

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AND METHOD OF ATTACHMENT
TO OBTAIN UNIQUE PROPERTIES"

GRIPWHEEL DRIVER AND METHOD OF ATTACHMENT TO OBTAIN UNIQUE PROPERTIES

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation in part of application serial number 09/309,640 filed May11,1999 entitled Gripwheel Driver Assembly and Method Of Use.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to devices by which Driver Tools are actuated and handled.

2. Description of Prior Art

Ratchet Drivers are designed to eliminate both the need for disengaging from a fastener to return for another leg of spinning a driver tool's handle and the need for reconfiguring the grip to begin application of another spin of the driver's handle, operations necessary for rotation of a fastener in absence of a ratcheting mechanism. By eliminating the aforementioned operations, the time saved can be applied to just rocking the driver's handle back and forth with the hand, thereby increasing the number of rotational cycles and speeding rotation of the fastener. However, due to the fact that many fasteners are not snug enough to generate the frictional resistance required to cause the ratchet mechanism to ratchet, the opposing hand must, at times, be used to supply the additional frictional resistance. When a means is not provided to keep the hand poised in readiness while waiting to apply the resistance, applied only during return strokes, the hand must continually reconfigure on each successive cycle to correctly apply the added resistance, thus consuming much of the time saved by using the ratchet driver. If it becomes necessary for the fastener's spin to be reversed for any reason, the user must stop, reset the ratchet mechanism for reverse, spin the fastener, then stop, reset the ratchet mechanism for forward, and resume

operation; the resetting of the mechanism wastes an additional period of time. Furthermore, since the hand which is already positioned on the side of the driver's shank to apply the additional resistance, could, but being it lacks an efficient means to engage the shank and therefore cannot effectively continue spinning of the fastener, the return cycle is left unproductive and its potential not fully realized. In addition, when a hand grips the shank from a location on side the shank to spin the shank, it is not quite in spacial orientation such that it can rotate a distance equal to the distance rotated by a hand gripping on a driver handle at rear of the driver, a rotating ratio of two to three. Therefore a driver would benefit from an attached component devised so that the user's hand could act a role of clutch mechanism which normally is needed as part of the tool in order to have the tool's shaft move easily within the hand to achieve an alternating two handed continuous spin of the shank. Having such an attachment would free tool space permitting installation of, plus offer as platform to support, a means for stepping up the movement of the shank relative the movement of a hand which, while positioned along side the shank, spins the shank. Finally, since rocking the driver's rear-handle back and forth makes it difficult to hold the tool steady upon a fastener, the tool would benefit from an efficient means to guide the fore-portion of the tool against the work while operating the tool.

SUMMARY OF THE INVENTION

It is therefore an object of the invention to equip a driver tool, a tool having both a handle and shank extending perpendicularly from the handle, with a handle assembly used as both a second-handle, for spinning the driver's shank, and a guide means, used to aid in guidance of both the driver-tool and a second operating hand. The assembly is comprised of two separate positioned, shaped, utilized, and functioning halves, a hand utilized, discretely independently-rotatable, slip ring type hand-held-guide half, and a rotatable, hand-operated, driver-shank's, drive-means half called a drive-wheel herein. Both halves being attached upon the tool utilizing a

method of attachment prescribed herein to enable a one portion of a hand grasping upon the guide half of the assembly to direct the tool's shank toward the work and, through way of the gripping upon the guide, secure the one hand portion both linearly fixed relative, plus rotatable relative the shank as axis, and thereby position an unencumbered second portion of the hand to simultaneously, at will, grasp for holding or grasp for spinning the hand-operated drive-wheel-half of the assembly; and in addition, through the grasp of the drive-wheel also enable the drive-wheel to (1)be means for the hand's second portion to aid in guidance of the tool; (2)be means for the hand's second portion to supply additional frictional resistance for augmenting ratcheting of the driver when the driver is a ratchet type applied to loose-fitted-work; (3)be means for the hand's second portion to reverse the spin of the driver's shank without having to reset the ratcheting direction of the driver and; (4)be means for the hand's second portion to continue productive spinning of the shank during the opposing hand's unproductive driver-handle return strokes. To accomplish the aforementioned results the said guide and drive-wheel are structured as two separate shaped, positioned, utilized, and functioning halves, both components structured and sized such that the distance from at lease one axially-parallel-outward-surface of the guide to axis of the guide is essentially the same as the distance from the overall axially parallel outward surface of the drive-wheel to axis of the drive-wheel, the driver-tool's shank being used as the axis running perpendicularly through both components, and both components are sized so that their widths, as placed in line on the shank as axis, are such that a hand is able to grasp the two components simultaneously, and the hand-held-guide's shank-parallel outward-surface is shaped to enable holding in position on the guide any one portion of a hand grasping on the-shank-parallel- outward-surface of the said guide, while the drive-wheel's shank-parallel-outward-surface is shaped for ease of being, simultaneously along with the holding of the guide by a one portion of a hand, intermittently gripped, held, spun, and released by the grasp of any second, remaining not utilized on the guide, portion of the same said

hand; and additionally, the drive-wheel being a separate utilized and functioning half of the assembly, is shaped with bluntly curved surfaces substantially uniformly symmetrical about the axis of the wheel, so enabling the wheel to rotate within the grasp of a releasing, not-utilized-on-the-guide, second portion of the said hand, such that the, not-utilized-on-the-guide, second portion of the said hand is able to remain in position for gripping the drive-wheel, and yet also is able to rotate about the drive-wheel near or lightly touching the drive-wheel's surface, due to anchoring through linkage with the said hand's one portion which remains utilizing the guide, the guide being in addition discretely independently free-to-be-spun. The assembly's method of attachment comprises, having the slip ring type hand-held-guide slipped into place "loosely discretely, axially rotatably, girdling so as free from axially-rotatably-engaging the said tool's shank, the shank being used as axis for the guide's rotation by running perpendicularly through the guide, the guide linearly retained in the guide's location-on-the-shank, the location being adjacent-in-line-forward the drive wheel half the assembly, which-also-rings-the- shank, the guide thereby being nearer the shank's work end than the wheel, the guide being as, aforesaid girdling, is also being as discretely independently free-to-be spun, unlimited in distance and/or direction relative the driver's shank as axis for the spin and relative the assembly's drive-wheel as a separate utilized and functioning half of the assembly, the guide's attachment being by way of having the shank inserted perpendicularly through a bore, the bore larger in diameter than the shank and piercing through the guide", the shank inserted to a distance through the guide's bore so rearward of in line with the shank's work-end, and the shank may be inserted perpendicularly as aforesaid described, concentric the guide, either by being inserted "alone" perpendicularly through the guide's bore, " the shank immediate the guide" or by being inserted perpendicularly together with, and concentric of, another component inserted perpendicularly through the guide's bore, the guide's bore about the other component at the same location lengthwise on the other component as where the shank is concentric

the other component, "the shank being thus still as concentric the guide", and the assembly's method of attachment also comprises having the drive-wheel-half-the-assembly " ringing so axially rotatably encircling utilizing a manner of engaging to spin, the said tool's shank, the shank as being both perpendicularly running through the drive-wheel and used as axis for the wheel's rotation", the wheel linearly retained in its location on the shank, the location being adjacent-in-line-rearward the guide-half-the-assembly and further away from the shank's work-end than the guide which-also-girdles-the-shank, the wheel thereby being forward the fore-portion of the tool's handle and nearer the fore-portion than the guide, the tool's handle extending from plus engaging with the shank's portion emanating from opposite-the-side-of -the-assembly-from-the-side-facing-the-shank's-work-end, the handle being a part of the driver-tool for spinning the shank, the wheel being as, aforesaid-engaging, also being such that will spin the shank when spun while the guide is being such that will spin discretely independent the wheel when spun, thus the driver's handle is in line rearward the drive-wheel, the drive-wheel is in turn, in line rearward the guide, and the guide is in turn, in line rearward the work end of the shank; and both the gripwheel halves, the guide and wheel, are attached advantageously positioned near enough each other between the fore-portion of the driver's handle and the driver-tool shank's work end, such that a single hand is able to simultaneously grasp both the guide and drive-wheel utilizing them as bilongitudinally supporting halves. At least one retainer is placed, a retainer in front of the hand-held-guide's side which faces the shank's work end, to help retain the components in assembled operating position. The manner of the wheel's engagement with the shank to spin the shank can be in either one of two ways, one by having the wheel ring the shank so as to encircle "fixed" to the shank or two by having the wheel ring the shank so as to encircle " rotatable relative the shank", the shank being as axis for the wheel's rotation therefore being as inserted perpendicularly loosely fitted through a bore, either immediate the wheel or by way of concentric another component, piercing through the drive-

wheel, but the wheel still engaging the shank, as by also being dressed to engage the shank through linkage by way of a drive-train to spin the shank. The means utilized to effect the drive-wheel's engagement with the shank can be of any type including 1, having the shank's outside surface expanded and reshaped to form the drive-wheel component, by 2, dressing the inner surface of a bore through the drive-wheel with means which causes the wheel to grip the shank's surface so that the drive-wheel can have the shank inserted through the bore with the means causing the shank to be fixed to the wheel, or by 3, having a geared-internal-drive-train attached to the wheel and linking the wheel so to engage the shank, the train comprised of a loosely girdling the shank beveled-driving-gear centered and fixed to the drive-wheel's internal face, the driving-gear's teeth engaging a beveled-idler-gear able to spin being mounted at its center on an axle affixed to the driver handle's fore-portion, the same beveled-idler-gear having its teeth engaging a step-up-beveled-gear able to spin being mounted at its center on an axle affixed to the driver handle's fore-portion, the step-up-beveled-gear engaging a ringing the shank while engaging the shank drivem-gear; and the aforementioned gearing arrangement can be repeated in bilaterally symmetrical fashion on the shank's opposite side. Such a drive-train would be for increasing the speed of the shank's spin relative the speed of the drive-wheel's spin, thus compensating for any difference in the ability of one hand to spin the drive-wheel versus the other hand to spin the driver's rear-handle, a difference due to spacial orientation. The manner of guide's being discretely independently freely-able-to-be-spun, unlimited in distance and direction, including relative both the driver's shank and the assembly's drive-wheel, can be in either one of two ways, having a bore through the guide sized so that the shank can be directly inserted loosely fitted through the bore immediate the guide, the shank thereby acting as axle for the guide which, being a discretely separate component, is thus discretely independently freely-able-to-be-spun unlimited in distance and direction relative the driver's shank and the assembly's drive-wheel; or the guide can also be

discretely independently freely-able-to-be-spun relative the shank and drive-wheel, by having another component inserted loosely fitted through the guide's bore, the other component in turn ringing the shank to encircle the shank. As for example, the bore could be sized so that an extension of the drive-wheel's hub can be inserted loosely fitted into the guide's bore, the drive-wheel's hub would then act as axle for the guide, the guide being a discretely separate component is thus discretely independently freely-able-to-be-spun relative the hub; however, the shank as inserted through the hub also enables the guide to be discretely independently freely-able-to-be-spun relative the driver's shank, relative the wheel's hub, along with relative the drive-wheel, a separate utilized half of the assembly but unitized with the hub. Although the manner of attaching the guide to a tool can be either one of the two ways, the means to effect the attachment as such can be only one, that is by having the guide rotationally unengaged, not engaged by direct and/or by indirect means, to the shank as axis for the rotation.

As heretofore described the invention provides the driver tool with a second handle that is both a guide and second drive-means combined in an assembly form for handling the said tool more efficiently, augmenting operation of the said tool, and increasing the distance the tool's shank can be turned during application cycles. The assembly's capability of providing as such being due to having the two separate yet bilaterally supporting halves, the forward half the handle assembly, being the slip ring type hand-held-guide attached to spin discretely, independently-freely about the tool's shank, and the rear half the assembly, being the hand-operated-drive-wheel which is attached to engage the shank for holding or spinning the shank, both halves securely positioned location fixed relative a driver-tools shank and configured to be separately yet simultaneously utilized by a single hand.

A preferred method of operating the assembly while attached upon a driver tool would be to have a user clutch the slip ring type hand-held-guide between a thumb and at least one finger of a

hand to direct the tool's shank against work and, as needed, simultaneously bear down with the free portions of the same hand to grasp and hold or grasp and spin the shank-engaged, hand-operated drive-wheel for holding or spinning the shank. The grasping and holding or grasping and spinning may be timed to occur during return strokes of the user's other hand which operates the driver's handle. Clutching the hand-held-guide by a portion of a hand to guide the shank also serves to hold the unencumbered portions of the same hand in a position to utilize the drive-wheel. The assembly in whole form is effective for augmenting the ratcheting of a ratchet driver applied to loose fitted work, via grasping and holding of the hand operated drive-wheel when the holding is timed to occur during return strokes of the driver's handle. But additionally, the assembly can be used with any driver fitted with the invention, to further spin the driver's shank during application cycles through spinning the hand operated drive-wheel on normally unproductive return-stroke-periods of the driver's-handle.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings identical components are identified with identical reference numbers and lettering:

FIG. 1 is an exploded perspective side view of the gripwheel driver assembly, the present invention, illustrating shapes which can be used for the slip ring type hand-held-guide and hand-operated-drive-wheel which fall within the scope of the invention as described; and in addition the figure helps illustrate the method of attaching the gripwheel assembly, which includes having the guide discretely independently, freely-able-to-be-spun while girdling a driver's shank, and helps to illustrate by illustrating a one of the two alternate manners in which the guide can be enabled attachable in accordance with the required method, the manner illustrated in FIG. 1 being the slip ring type hand-held-guide is configured to loosely discretely girdle a driver-tool's shank, by being

"immediate" of the shank, through way of a bore through the guide sized so that the shank can be directly inserted loosely fitted through the guide's bore, the specific means illustrated as enabling the guide to be freely able to be spun, and being there is only one possible, is having the guide not enabled to axially-rotatably engage the shank inserted through the guide's bore by having the bore smooth enough and loose enough about the shank so as not to engage but yet permit the guide to be linearly retained in the location on the shank by way of a retainer such as the retainer ring illustrated in the FIG. 1; and the FIG. 1 further helps illustrate the method of attaching the gripwheel assembly, which includes having the wheel ringing so to encircle engaging a driver's shank, by illustrating one of the two alternate manners in which the drive-wheel is enabled attachable in accordance with the required method, the manner in FIG. 1 being having the wheel configured to ring a shank "fixed-to-the-shank" thereby engaging the shank, the specific means enabling such fixed engagement being jagged surface ridges inside a piercing through the drive-wheel bore, the bore sized small enough for the drive-wheel to be tightly press fitted onto a shank through the bore thereby ringing the shank, the ridges thus digging into the shank's surface fixing the wheel to the shank, but any one of several means can be used to fix the wheel to the shank;

FIG. 2 is an exploded perspective side view of the gripwheel driver assembly, the present invention, illustrating the alternate manner to that illustrated in FIG. 1 for enabling the slip ring type hand-held-guide, half the assembly, to be attached girdling a driver's shank in accordance with the required method so resulting in the guide being discretely independently freely-able-to-be-spun, the alternate manner being the guide is enabled to loosely girdle a driver's shank through way of " loosely-girdling another component" at a location upon the other component whereby the shank is concentric the other component, the other component in turn being ringing the shank; and the FIG. 2 also illustrates a fixed-to-the-shank manner similar to that illustrated in FIG. 1, for enabling the drive-wheel to be attached in accordance with the required method of attachment, but

FIG. 2 additionally illustrates that although the drive-wheel is enabled to be attached as "fixed to a shank", it is possible for the specific means of fixing the wheel to the shank to vary, as exemplified in the figure by having the means, while similar to that shown in FIG. 1, to additionally incorporate as part of the means a unitized construction of the drive-wheel with a hub;

37FIG. 3 is an unexploded, external, side plan perspective view of the gripwheel-driver-assembly of FIG. 1 and/or of FIG. 2, showing the gripwheel's slip ring type hand-held-guide and hand operated drive-wheel adjacent-in-line such that a hand is able to grasp both components simultaneously, and reveals that the exploded depictions of both the FIGURES 1 and 2 are essentially the same device in overall structure and use when the components are assembled as utilized;

FIG. 4 is a partial cross sectional front view of the gripwheel assembly of FIG. 2 having the embodiment placed ready for operation on a phantom outlined portion of a driver tool's shank; the figure reveals the assembly attached in accordance with the required method of attachment comprising having the guide half the assembly, "loosely discretely, axially-rotatably, girdling so as free-from-axially-rotatably-engaging the tool's shank, the shank being used as axis for the guide's rotation by running perpendicularly through the guide, the guide linearly retained in the guide's location-on-the-shank, the location being adjacent-in-line-forward the drive wheel half the assembly, which-also-rings-the-shank, the guide thereby being nearer the shank's work end than the wheel, the guide as, aforesaid-girdling, is also being as discretely independently free-to-be-spun unlimited in distance and/or direction relative the driver's shank as axis for the spin and relative the assembly's drive-wheel as a separate utilized and functioning half of the assembly, the guide's attachment being by way of having the shank inserted perpendicularly through a bore, the bore larger in diameter than the shank and piercing through the guide"; and also revealed in FIG. 4, the attachment of the wheel-half-the-assembly as in accordance with the required method,

42.012 comprising having the wheel "ringing so axially rotatably encircling, utilizing a manner of
42.013 engaging to spin, the said tool's shank, the shank being both perpendicularly running through the
42.014 wheel and used as axis for the wheel's rotation", the wheel linearly retained in its location on the
42.015 shank, the location being adjacent in-line-rearward the guide-half-the-assembly and further away
42.016 from the shank's work-end than the guide, which-also-girdles-the-shank, the wheel thereby being
42.017 forward the fore-portion of the tool's handle and nearer the fore-portion than the guide, the tool's
42.018 handle extending from plus engaging with the shank's portion emanating from opposite-the-side-
42.019 of-the-assembly-from-the-side-facing-the-shank's work-end, the wheel being as, aforesaid-
42.020 engaging, also being such that will spin the shank when spun while the guide is being such that will
42.021 spin discretely independent the wheel when spun, thus as shown in FIG. 4, the driver's handle is in
42.022 line rearward the drive-wheel, the drive-wheel is in turn, in line rearward the guide, and the guide
42.023 is in turn, in line reward the work end of the shank; and the attachment of the gripwheel in
42.024 accordance with the aforesaid method is illustrated in the FIG. 4 as accomplished by way of the
43 manner and means in which the guide and drive-wheel are dressed to do so in FIG. 2;

44 FIG. 5A is a partial cross sectional front view of a gripwheel driver assembly with the
45 embodiment placed ready for operation mounted on a phantom outlined portion of a driver tool,
46 but differs from FIGURES 1, 2 and 4 by illustrating the only alternate manner, to that illustrated
47 in FIGURES 1, 2 and 4, of having the "drive-wheel" enabled for attachment in accordance with
47.1 the required method of attachment, the manner in FIGURES 1, 2, and 4 being as enabled to ring a
47.2 driver's shank "fixed directly to the shank" to encircle-engaged with so to spin the shank; the
48 alternate manner in FIG. 5A being as enabled to ring a driver's shank, whether as immediate the
48.1 shank or by way of ringing another component ringing the shank having no bearing on the
48.2 outcome, loosely so able to be spun about the shank, the shank being as axis for the spin, while the
49 wheel engages the shank through linkage by a drive-train, the specific means utilized in FIG. 5A for

engaging the shank being a-geared-internal-drive-train;

FIG. 5 b is a partial-cross-section side view of the driver's rear-handle-fore-portion 25 that was depicted in the FIG. 5A front view and reveals the outside housing 40 of the fore-portion 25 plus the section that was cutaway, the cutaway section still shown but in phantom; the figure helps to further illustrate the alternate manner revealed in FIG. 5A for having the wheel engage the shank to spin the shank, the alternate manner being engaging by linkage through a drive-train, the specific illustrated means being a geared-internal-drive-train; but note that FIG. 5 b illustrates only components used in attachment of an assembly's drive-wheel, none are intrinsic parts of the assembly itself;

FIG. 6 is a side plan perspective view of the gripwheel driver assembly depicted in either FIG. 2, FIG. 4, or FIG. 5A but in FIG. 6 the gripwheel is shown in assembled form attached unexploded on a driver-tool, the tool having both alternate embodiments of its rear-driver-handle-fore-portion, 25 of FIG. 4 and 25 of FIG. 5A, one used with the assembly's drive-wheel engaging the shank by manner of fixing the wheel to the shank, the other used along with the assembly's drive-wheel engaging a shank by way of a drive-train, both fore-portions being depicted in phantom, one superimposed over the other, while attached to the rest of a driver's handle shown in phantom;

FIG. 7 is a side plan view of a gripwheel driver assembly mounted on a driver tool illustrating both the work end of the tool and the operating end of the tool, revealing that the work end of the tool is the work end of the driver-tool's shank, the shank's work end in FIG. 7 also being the free end of the shank; and additionally, the figure illustrates that the operating end of the tool is the operating end of the driver-tool's handle;

FIG. 8 is a bottom plan perspective view of the gripwheel driver assembly shown isolated from a driver tool revealing both the internal face of the drive-wheel and a bore through the drive-

wheel;

FIG. 9 is a top plan perspective view of the gripwheel driver assembly shown isolated from a driver tool revealing a bore through the guide;

FIG. 10 is a side plan exploded view of the gripwheel-driver-assembly illustrating the last stage of attaching the device about a driver tool's shank whereby the slip ring type hand-held-guide is slipped into place loosely discretely girdling the shank of a driver-tool by way of perpendicularly inserting the shank through a-bore-through-the-guide, the bore of a type as illustrated in FIG. 9;

FIG. 11 is a side plan view of a preferred type ratchet driver tool of the genre having a handle with a shank extending perpendicularly from the handle, and is the type to which a gripwheel driver assembly would be attached, the tool being shown isolated from the gripwheel-driver-assembly, and

FIG. 12 is a sequence of side plan views revealing the recommended hand operations for utilizing the gripwheel driver assembly mounted on a driver tool and includes arrows denoting the direction of forces applied by the hand to the assembly and through the assembly to the tool.

DETAILED DESCRIPTION OF THE INVENTION AND METHOD OF ATTACHMENT

FIG. 1, an exploded perspective side view of the gripwheel driver assembly, the present invention, shows the assembly comprised of two halves, the slip ring type hand-held-guide half 13 and the hand operated drive-wheel half 14. As illustrated in the FIG. 1, the guide and drive-wheel halves are structured as separate, positioned, shaped, utilized, and functioning component parts that are used in combination as the assembly and are sized such that the distance from at lease one axially-parallel-outward-surface of the guide to axis of the guide is essentially the same as the distance from the overall axially parallel outward surface of the drive-wheel to axis of the drive-

wheel, a driver-tool's shank to be utilized as the axis by having the shank run perpendicularly through 30 and 31 of the guide and wheel, and both components are sized so that their widths, as placed in line on a shank as axis, are such that a hand is able to grasp the two components simultaneously, and the hand-held-guide's shank-parallel-outward-surface, illustrated in the FIG. 1 by showing the guide's shank-parallel-outward-surface concavely shaped and sharply curved, is shaped to enable holding in position on the guide13 any portion of a hand-grasping- on-the-shank-parallel-outward-surface of the said guide 13, while the drive-wheel's shank-parallel-outward-surface is shaped for ease of being, simultaneously along with the holding of the guide 13 by a one portion of a hand, intermittently gripped, held, spun, and released by the grasp of any remaining not utilized on the guide, second portion of the same said hand, illustrated in the FIG. 1 by the wheel's shank parallel outward surface being convexly shaped and bluntly curved, and additionally, the drive-wheel 14, being a separate utilized and functioning half of the assembly, has its bluntly-curved-shank-parallel-outward-surface substantially uniformly symmetrical about the axis of the wheel, to enable the wheel to rotate within the grasp of the releasing, not-utilized-on-the-guide, second portion of the said hand such that the, not-utilized-on-the-guide, second portion of the said hand will be able to remain in position for gripping the wheel yet also will be able to rotate about the drive-wheel, near or lightly touching the drive-wheel's surface, due to anchoring through linkage with the said hand's one portion which remains utilizing the guide, the guide additionally being discretely independently free-to-be-spun. And also, as the FIG. 1 helps illustrate, the guide 13 is enabled to be attached on a driver's shank in accordance with a required method of attachment, the method comprising having the guide half the assembly 13, girdling so as free from axially-rotatably-engaging a driver-tool's shank , the shank used as the axis for the guide's rotation, by having the shank " loosely discretely, axially-rotatably, running perpendicularly through a bore 30 through the guide, the guide linearly retained in its location-on-

the-shank, the location being adjacent-in-line-forward the drive wheel half the assembly, which-also-rings-the-shank, the guide thereby being nearer the shank's work end than the wheel, the guide as, aforesaid-girdling, thereby being discretely independently free to be spun unlimited in distance and/or direction relative the driver's shank as axis for the spin and relative the assembly's drive-wheel as a separate utilized and functioning half of the assembly. To be attached in accordance with the aforesaid required method the guide is enabled, such as illustrated in FIG. 1, attachable by using one of only two possible alternate manners in which the guide can be attached as aforesaid, the manner used in FIG. 1 being by having the bore 30 through the guide sized with a diameter large enough to permit the shank to be inserted loosely-fitted perpendicularly through the bore", so that the guide will girdle loosely "immediate of", as to spin directly upon the-shank-as-an-axil, the specific means utilized effecting the guide's being freely able to spin, regardless of the manner used, as being there is only one means, is to have the inner surface of the guide's bore axially-rotatably smooth enough while the bore is loose enough about the shank so that the guide will not rotationally engage the shank-as-axil inserted through the guide's bore but yet permitting the guide to still be linearly retained in its location on the shank by a retainer such as retainer ring 16 FIG. 1. And lastly, as the FIG. 1 also helps to illustrate, the hand operated drive-wheel14 is enabled to be attached on a driver's shank by the required method of attachment, which comprises having the wheel-half-the-assembly "ringing so axiallly rotatably encircling, utilizing a manner of engaging to spin, the driver-tool's shank, the shank being both perpendicularly running through the wheel and used as axis for the wheel's rotation", the wheel linearly retained in its location on the shank, the location being adjacent in-line-rearward the guide-half-the-assembly and further away from the shank's work end than the guide, which-also-girdles-the-shank, the wheel thereby being forward the fore-portion of the tool's handle and nearer the fore-portion than the guide, the tool's handle extending from plus engaging with the shank's portion emanating from opposite-the-side-of-the-

assembly-from-the-side-facing-the-shank's work-end, the wheel being as, aforesaid-engaging, therefore is being such that will spin the shank when spun, while the guide is being such that will spin discretely independent the wheel when spun. To be attached in accordance with the aforesaid required method the wheel is enabled, such as illustrated in FIG. 1, attachable by using one of only two alternate manners in which the drive-wheel can be attached as such, the manner used in FIG. 1 being the manner of directly fixing the wheel to the shank so the wheel is ringing to encircle-engaged with to spin the shank, but the specific means utilized to effect such fixed engagement can be any one of several, the one used in FIG. 1 being means of jagged ridges 15a inside a through-the-drive-wheel bore, the bore sized small enough for the shank to be tightly press fitted through the bore, the jagged ridges thus digging into the shank's surface thereby fixing the wheel to the shank. Such direct engagement for the drive-wheel enables the wheel to directly spin the shank upon rotation of the wheel.

FIG. 2, another exploded perspective side view of the gripwheel driver assembly, the present invention, illustrates the alternate manner of enabling the guide to be attached, alternate to the manner illustrated in FIG. 1, which when utilized in lieu of the manner illustrated in FIG. 1 still permits the guide to be attached in accordance with the required method of attachment, the manner being to have the guide 13 loosely girdle a shank through way of loosely girdling another component ringing the shank; and is illustrated in FIG. 2 by having the drive-wheel's hub extended, the hub-extension 18 inserted through a bore 30 sized through the guide 13 such that the hub18 can be perpendicularly inserted loosely fitted through the bore 30, the guide thereby can loosely girdle the driver's hub 18, discretely independently free-to-be-spun, unlimited in distance and direction relative the hub, but the hub18 in turn is enabled to be attached ringing a driver's shank so encircling engaged with the shank, as can be seen illustrated in FIG. 2 by showing the hub having a bore 31 through the hub 18 to be used for inserting a driver's shank press fitted through

the bore, the bore having internal surface ridges for digging into, fixing upon, and engaging the shank, thus the guide 13, through way of a driver-shank's insertion through the hub's bore 31, will, as in accordance with the required method of attachment, loosely discretely girdle the driver's shank, the guide discretely independently free-to-be-spun, unlimited in distance and direction relative the shank as axis for the spin, relative the drive-wheel's hub as axil for the spin, along with relative the assembly's drive-wheel being a separate utilized and functioning half of the assembly, the guide linearly retained, location fixed on the shank, by a retainer ring such as 17 of FIG. 2 clipped onto the end of the hub. Also illustrated in FIG. 2 is the same ringing the shank fixed-to-the-shank thus engaging the shank manner-of-attaching-the-drive-wheel as was illustrated in FIG. 1, being one of the two alternate manners which can be utilized so to have the wheel engage a shank in accordance with the required method, but the specific means utilized enabling the wheel to be fixed to a shank as said can be any one of several and still be in accordance with the required method of attachment, for example by gluing the wheel onto-ringing a shank, or press fitting the wheel onto-ringing a shank as illustrated in FIG. 1, or expanding the shank itself to form the wheel onto-ringing the shank, etc. or for further illustration, by way of the means illustrated in FIG. 2, which although similar to FIG. 1 differs from FIG. 1 by incorporating the use of a unitized drive-wheel and hub construction, the hub18 being the component fixed to the shank in lieu of the wheel 14, but the hub18 is utilizing the same manner and means as the wheel uses in FIG. 1 for engaging a shank, which is by being fixed to the shank through the means of a bore as like the bore through the wheel in FIG. 1 but piercing through the hub, the bore having internal surface ridges which will be caused to dig into a shank's surface when the bore is tightly press fitted onto a shank, but as the hub will be fixed to the shank, so will the wheel be fixed to the shank and, by thus, the wheel will also engage the shank, all through interconnection of the wheel and hub by way of the unitized construction. A cut away of the hub illustrates the shank engagement means 15a.

FIG. 3, an external side plan perspective view of the gripwheel driver assembly, shows the gripwheel of either FIG. 1 or FIG. 2 as assembled and ready to be attached on a driver tool. As illustrated in figure 3, when either the gripwheel assembly of FIG. 1 or FIG. 2 is assembled for utilization on a tool as in FIG. 3, both figures are depicting the same gripwheel overall structure, use, and barring various physical means applied to attach the assembly, such as 30 and 31 of FIGURES 1 and 2; 15a of figures 1, 2, and 4; 16 of FIGURES 1 and 4; 17 of FIGURES 2 and 4; 15 D of FIG. 5A, is structured so to be enabled, in accordance with the-required-method-of-attachment, attached upon a driver's shank, the shank positioned in the fashion of an axis for the assembly.

FIG. 4, containing a partial cross sectional front view of the gripwheel driver assembly of FIG. 2, shows the assembly placed ready for operation mounted on a phantom outlined portion of a driver tool. As illustrated in FIG. 4, the required area-on-the-tool's shank 33 which is utilized for the device to function is between the driver-handle's fore-portion 25 and the work end of the shank 33, the work end of the shank in FIG. 4 also being the shank's free end. Additionally, as can be seen in FIG. 4, the gripwheel is attached on the driver's shank 33 in accordance with the required method of attachment, comprised of having the guide half the assembly 13, "loosely discretely, axially-rotatably, girdling so as free from axially-rotatably-engaging a driver tool's shank 33, the shank being used as axis for the guide's rotation by running perpendicularly through the guide 13, the guide linearly retained in the guide's location-on-the-shank as by a retainer such as retainer ring 17 of FIG. 4, the location being adjacent-in-line-forward the drive wheel half the assembly 14, which-also-rings-the-shank 33, the guide 13 thereby being nearer the shank's work end 28 FIG. 6 than the wheel 14, the guide being as, aforesaid-girdling, is also being as discretely independently free-to-be-spun unlimited in distance and/or direction relative the driver's shank as axis for the spin and relative the assembly's drive-wheel as a separate utilized and functioning half of the

assembly, the guide's attachment being by way of the shank inserted perpendicularly through a bore 30 as of FIG. 2, the bore larger in diameter than the shank and piercing through the guide", the shank 33 FIG. 4 inserted to a distance through the guide's bore so reward of in line with the shank's work end 28 as of FIG. 6; and comprised of having the wheel-half-the-assembly 14 FIG. 4 "ringing so axially rotatably encircling, utilizing a manner of engaging to spin, the said driver tool's shank 33, the shank being both perpendicularly running through the wheel 14 and used as axis for the wheel's rotation", the wheel 14 linearly retained in its location on the shank 33 by a retainer such as 16 of FIG. 4, the location being adjacent in-line-rearward the guide-half-the-assembly13 and further away from the shank's work end 28 as of FIG. 6 than the guide 13 FIG. 4, which-also-girdles-the-shank, the wheel thereby being forward the fore-portion 25 FIG. 4 or 6 of the tool's handle 27 as of in FIG. 6 and nearer the fore-portion than the guide 13, the tool's handle 27 extending from plus engaging with the shank's portion emanating from opposite-the-side-of-the-assembly-from-the-side-facing-the-shank's work-end 28 FIG. 6, the wheel being as, aforesaid-engaging, also being such that will spin the shank when spun while the guide is being such that will spin discretely independent the wheel when spun, thus the driver's handle is inline reward the drive-wheel, the drive-wheel is in turn, inline reward the guide, and the guide is in turn in line reward the work end 28 of the shank 33: and both gripwheel halves , the guide 13 and the drive-wheel 14 are attached advantageously positioned near enough each other between the fore-portion of the driver's handle 25 and the driver-shank's work end 28, such that a single hand is able to simultaneously grasp both the guide 13 and the drive-wheel 14 utilizing them as bilongitudinally supporting halves of the assembly; and the gripwheel in the FIG. 4 is shown attached in accordance with the aforesaid required method through utilizing both the manner of the guide's attachment and the manner of the wheel's attachment as is illustrated in the FIG. 2, the guide's manner of attachment being having the hand-held-guide 13 loosely-girdling-the-shank-33 through way of

"loosely-girdling-another-component", the other component being the drive-wheel's hub18, the girdling of the shank "through way of" being by way of having the shank 33 perpendicularly running concentrically through the hub 18 which as thus is inserted perpendicularly through the guide's bore 30, both the shank and the hub being concentric the same location on the guide as from within the guide's bore 30; and the wheel's manner of attachment being having the drive-wheel 14 ringing so as "fixed" to the shank by way of the unitized construction of the drive-wheel 14 with the wheel's hub 18, the hub being fixed to the shank, thus both the hub and the wheel are engaging the shank by way of the hub's being fixed 15a to the shank 33, and each of the aforesaid manners shown in FIG. 4, the manner of attaching the guide and the manner of attaching the wheel, are one of only two alternate manners for each, the guide and the wheel, of which may be utilized and still be attaching the guide and the wheel in accordance with the required method of attachment, the gripwheel thus appearing attached on a shank as illustrated in FIG. 4. And lastly as seem illustrated in FIG. 4, when the drive-wheel utilizes a manner-of-engaging the shank by being fixed to the shank, the engagement manner doesn't require any necessary configuration of the driver-handle's fore-portion 25.

FIG. 5A, a partial cross sectional front view of the gripwheel driver assembly, has the assembly attached ready for operation on a phantom outlined portion of a driver tool, but while FIGURES 1, 2, and 4 illustrate the manner of the drive-wheel's engagement with a shank to spin the shank as being by way of the wheel's ringing "fixed to" thus engaging the shank, the FIG. 5A illustrates the alternate to the manner illustrated in FIGURES 1, 2, and 4, the alternate manner being to have the wheel 14 FIG. 5A loosely ring the shank 33 FIG. 5A , the wheel's-ringing-the-shank being as either "immediate of the shank " or by way of "loosely ringing another component ringing the shank", while having the wheel 14 engaging the shank through linkage by way of a drive-train, the specific means utilized in FIG. 5A to effect the engagement being a geared-internal-

drive-train 15D. As 110the FIG. 5A illustrates, the preferred component parts of a geared-internal-drive-train would be the following: a beveled driving-gear 20, loosely girdling the shank 33 but centered and fixed to, therewith directly-engaging upon, as 15b FIG. 5A, the drive-wheel's internal face 32 shown in FIG. 8; the beveled driving-gear 20 engaging a beveled idler-gear 21, able to be spun mounted at its center on an axil affixed to the driver handle's fore-portion 25; the same beveled idler-gear 21 engaging a beveled step-up-gear 22, able to be spun mounted at its center on an axil affixed to the driver handle's fore-portion 25; the beveled step-up-gear engaging a driven-gear 23 which is ringing to encircle so as fixed 15c to and thus engaged with to spin the driver's shank 33; and the gearing arrangement 24 which is a repeat of the aforementioned arrangement 21-22 which can be repeated in bilaterally symmetrical fashion on the shank's, driven-gear's, and driving-gear's opposite side. Also as illustrated in FIG. 5A and differing from figure 4, the driver-handle's fore-portion 25, due to involvement of the drive-train with the handle's fore portion, is configured to have the gears of the drive-train 15b spin on axils perpendicularly affixed to the handle's fore-portion.

FIG. 5 b, a partial-cross-section side view of the driver's rear-handle-fore-portion 25 which is depicted in FIG. 5A as a front view, reveals the outside housing 40 of the fore-portion 25 and the section that was cutaway, the cutaway section still shown but in phantom; the figure helps to further illustrate the alternate manner revealed in FIG 5A for having the wheel engage the shank to spin the shank, the alternate manner being through linkage using a drive-train, the specific means illustrated being a geared-internal-drive-train. As the figure is revealing, the driver-handle's housing 40 can be configured so as to wrap behind the step-up-gear 22 for use as a platform to mount the idler gear 21, but note that the FIG. 5 b illustrates only components used in attachment of an assembly's drive-wheel and none are intrinsic parts of the gripwheel assembly itself.

131FIG. 6, a side plan perspective view of the gripwheel assembly shown in either

FIGURES 1, 2, 3, 4, or 5A, illustrates the assembly attached on a phantom outline of a driver tool having both alternate embodiments of the rear-driver-handle-fore-portion 25 of FIG. 4 and 25 of FIG. 5A in phantom, one superimposed over the other, while they are attached to the rest of a driver's rear-handle 27 also shown in phantom. As illustrated by FIG. 6, being representative of all the embodiments FIGURES 1, 2, 3, 4, and 5A, when the gripwheel assembly is assembled and attached on a tool all the embodiments have essentially the same overall form, configuration, structure, and use, barring various physical means utilized to attach the assembly, 30 FIGURES 1 and 2; 15a of figures 1, 2, and 4; 16 of FIGURES 1 and 4; 17 of FIGURES 2, and 4; 15 D of FIG. 5A, and all the embodiments while utilizing various physical elements to attach the assembly are attached with those elements by using the same required.

FIG. 7, a side plan view of a gripwheel driver assembly mounted on a driver tool, illustrates both the work end 28 and operating end 29 of the tool. As revealed in FIG. 7, the work end of the tool is also the work end of the driver-tool's shank 33, the work end of the driver's shank 33 in FIG. 7 also being the free end of the shank. Additionally revealed in FIG. 7 , the operating end of the tool is the operating end of the driver-tool's handle 25 of 27. Lastly, as revealed in FIG. 7, the orientation of the gripwheel's component parts as relative the tool's work end 28 and the tool's operating end 29 is such that the gripwheel is between 28 and 29.

FIG. 8, a bottom plan perspective view of the gripwheel driver assembly shown isolated from a driver tool, reveals the internal face 32 of the drive-wheel and a bore 31 through the wheel. As the FIG. 8 helps to reveal, both the bore 31 and internal face 32 are drive-wheel configurations which can be utilized as part of the means for enabling the wheel to be attached ringing a driver-tool's shank, the wheel encircling engaged with the said shank, as for example, the means can comprise having the wheel's bore sized for insertion of the driver's shank while the inner surface of the bore is dressed to be fixed to the shank as 15a of FIG. 4, a manner of engaging the shank by

fixing the wheel to the shank , or the means can comprise having the bore sized to loosely girdling the shank while the " internal face" 32 of the drive-wheel is dressed to engage the shank as 15 D of FIG. 5A, a manner of linking the wheel as engaged to the shank through a drive-train. But note that the shank itself could be expanded to form the drive-wheel component thereby, the wheel being of the shank, would engage the shank as fixed to the shank, such a manner of forming the wheel attached makes a bore irrelevant. Any of the aforementioned wheel attachment manners enables the wheel to be attached in accordance with the required method.

FIG. 9, a top plan perspective view of the gripwheel driver assembly shown isolated from a driver tool, reveals a bore 30 through the slip ring type hand-held-guide. As the FIG. 9 helps to illustrate, a bore 30 is a constant element always part of any manner used to enable the guide be attached loosely girdling the shank of a tool so discretely independently freely-able-to-be-spun about the shank. But as the FIG. 9 also helps to illustrate, the means utilized to enable the guide be freely able to be spun includes sizing of the bore so large enough with inner surface smooth enough to be loose about, as not to engage, a shank perpendicularly inserted as spinable like an axis through the bore; and being the bore's sizing is to accommodate the diameter of the component girdled, the sizing also will depend upon the manner of the guide's girdling spinable the shank, as the guide may girdle either immediate the shank or by way of girdling another component girdling the shank, therefore the bore may be any one of various sizes accommodating the diameter of the girdled component, yet the guide will still be attached as girdling in accordance with the required method.

FIG. 10, a side plan exploded view of the gripwheel driver assembly is depicting the method of attaching the gripwheel components, the guide and wheel, to a driver tool. As the FIG. 10 illustrates, the slip ring type hand-held-guide 13 is slipped into place loosely discretely girdling the shank 33 of the driver-tool and separate the assembly's drive-wheel 14 by a method resulting in the

guide's being "discretely independently freely-able-to-be-spun unlimited in distance and direction relative the driver tool, as the guide's only contact with the tool is with the driver's shank 33 being used as axis for the spin, and relative the assembly's drive-wheel 14, as being a separate utilized and functioning half of the assembly". The method illustrated being by inserting the shank 33 through a bore 30, larger in diameter than the shank and piercing through the guide 13, to a distance on the shank from the shank's work end 28, as 28 in FIG. 7, such that the guide is girdling rearward of in line with the shank's work end, the guide being retained in the guide's location on the shank by a retainer such as retainer ring 16 FIG. 10; and the location on the shank the guide girdles is also in line forward the work side of the drive-wheel 14 FIG. 10, the drive-wheel ringing to encircle the shank but utilizing a manner of "engaging upon the shank 33 FIG. 10 to spin the shank 33", the location the wheel is ringing on the shank being even further in line rearward on the shank than the guide's location from the work end 28 of the shank; and the location the wheel is ringing on the shank also is in line forward the work-end 25 of the driver's handle 27, as 25 of 27 FIG. 7, the work-end of the driver's handle being the fore-portion 25 FIG. 10, of the handle 27, the handle being a part of the tool which is attached engaging upon and in line with the rear-end of the tool's shank 33, the rear end of the tool's shank being the opposite shank-end from the shank's work-end 28, the attachment of the handle to the shank being to spin the shank 33, the wheel being retained in-location-rearward-the-guide by having the wheel as reward the retainer 16 FIG. 10 yet forward the fore-portion of the driver's handle, thus the driver's handle is in line rearward the drive-wheel 14, the drive-wheel is in turn, in line rearward the guide 13, and the guide is in turn, in line rearward the work end of the shank; and both the gripwheel halves, the guide and wheel, are attached advantageously positioned near enough each other between the fore portion of the driver's handle 25 and the tool's work end 28, such that a single hand is able to simultaneously grasp both the guide and drive-wheel utilizing them as bilongitudinally supporting halves.

194 FIG. 11 is a side plan view of a preferred type driver tool. As the FIG. 11 reveals, the tool is
194.1 from the genre of tools having-a-handle-and-a-shank-extending-perpendicularly-from-the-handle,
195 the handle being for spinning the shank, and is the genre of tools to which a gripwheel driver
196-201 assembly would be attached. The tool is shown isolated from the assembly.

202 Referring now to FIGURES 1, 2,3, 4, 5A, 6,7,10, and 11, the gripwheel driver assembly
203 FIG. 3, being a means for guiding and actuating, comprises both a slip ring type hand-held-guide-
204 half 13 and a hand-operated drive-wheel-half 14, each used in conjunction with the other, both
205 being attached as the assembly upon a driver-tool of genre shown in FIG. 11, such that the
206 assembly is located between the work end 28, as in FIG. 6, of the driver tool's shank 33 FIG. 6 and
207 the work end of the fore-portion 25 of the driver tool handle 27 in FIG. 6. The hand-held-guide
208 half the assembly 13 as in FIG. 10 is attached to the driver-tool by method of loosely discretely,
209 axially rotatably, girdling so as free from axially-rotatably-engaging the driver tool's shank 33 as
209.1 axis, the guide linearly retained in its location-on-the-shank, the location being adjacent-in-line-
209.2 forward the drive wheel half the assembly 14 FIG. 10, which-also rings-the-shank, the guide
210 thereby being nearer the shank's work end 28 FIG. 10 than the wheel, the guide being as, aforesaid
211 girdling, also being discretely independently free-to-be-spun, unlimited in distance and/or direction
212 relative the driver's shank 33 as axis for the spin and relative the assembly's drive-wheel 14 as a
212.1 separate utilized and functioning half of the assembly, and the manner of being attached as said is
213 either by loosely girdling immediate the shank through way of a bore 30 piercing through the guide
213.1 and sized for insertion of the shank, as bore 30 in FIG. 10, or by indirectly loosely girdling the
214 shank through way of a bore 30 through the guide sized for loosely girdling another component 18
214.1 as of FIG.2 which will ring the shank 33 FIG. 10, and the means utilized to effect the guide's being
215 freely able to be spun is that of having the guide's bore configured large enough with inner surface

smooth enough so as not to rotationally engage either directly or indirectly with the shank inserted as an axis perpendicularly through the bore yet have the bore still able to permit the guide to be fixed linearly relative the shank as by a retainer such as retainer ring 16 FIG. 10 or 17 FIG. 2 . The drive-wheel 14, as in FIG. 10, is attached to the driver-tool by method of ringing so encircling engaged with a driver-tool's shank 33, the wheel being linearly retained in its location on the shank, the location being adjacent in line rearward the guide-half-the-assembly and further away from the shank's work end 28 FIG. 10, than the guide 13, which-also-girdles-the-shank, the wheel thereby forward the fore-portion 25 of the tool's handle 27 as in FIG. 7 and nearer the fore-portion 25 than the guide, the tool's handle 27, extending from plus engaging with the shank's portion emanating from opposite-the-side-of-the-assembly-from-the-side-facing-the-shank's- work-end 28 FIG. 10, the wheel being as, aforesaid engaging, also being such that will spin the shank 33 when spun while the guide is being such that will spin discretely independent the wheel when spun, and the manner in which the guide is attached as said is either by directly engaging the shank by girdling fixed to the shank or by engaging the shank through linkage utilizing a drive train, the wheel being loosely-girdling rotationally-relative the shank as axis, and the means to effect the wheel's engagement being any of several, one for example being a jagged bore through the wheel sized to be press fitted about the shank 15a FIGURES 1, 2 and 4, engaging by being directly fixed to the shank to spin said shank, or another being a geared internal drive train 15D in FIG. 5A linking a ringing-loosely-the-shank drive-wheel 14 to a ringing-directly-fixed-to-the-shank driven-gear 15c to spin the said shank, either means resulting in the wheel's engaging the shank to spin the said shank, and both the guide13 and drive wheel 14 are positioned such that near enough each other so that a single hand is able to utilize them simultaneously. The linear movement of the guide 13 relative the shank 33 is fixed by a retainer such as 16 FIG. 1 or 17 FIG. 2 while the linear movement of the drive-wheel 14 relative the shank 33 is fixed by either the wheel's engagement method upon the

shank 33 which cam fix the wheel to the shank 33, or by the wheel's positioning, such as in FIG. 6, located rearward-the-guide but also reward the retainer 16 FIG. 6 and yet forward the fore-portion of the driver's handle 25.

Referring now to FIGURES 7, 11 and 12, using a preferred method of operating the gripwheel driver assembly upon a ratchet driver tool, the operator would first grasp the slip ring type hand-held-guide 13 FIG. 7 between a thumb and at least one finger 38 FIG. 12, the first portion of a hand-one 36 FIG. 12, to guide the driver's shank 33 FIG. 7 toward work, FIG. 12 OPERATION 1 and, thereupon, the operator would keep the first hand portion 38 upon the guide to use the first hand portion for guiding and holding the shank against work, and at the same time the user would rock the driver's rear handle 27 FIG. 7 counter clockwise using the second hand 37 FIG. 12 , a return stroke by the second hand in preparation for productive rotation by the second hand, the stroke continuing until the second hand reaches maximum rotational extension, FIG. 12 OPERATION 2. While the second hand 37 FIG. 12 is moving to its maximum counter clockwise extension, the operator bears down and grips the 14 FIG. 7 hand-operated-drive-wheel 14 with the hand-one's second portion 39 FIG. 12, which remained as not-utilized-for-holding-onto-the-guide 13, so as to rock the shank-engaged drive-wheel 14 clockwise thus spinning the shank 33 clockwise, FIG. 12 OPERATION 2. The hand one portion 38 FIG. 12 which is holding onto the guide is kept on the guide and continues to remain on the guide during all operations allowing the guide to fulfill another role which is that of being means to anchor the hand-one 36 FIG. 12 in just such an advantageous position to have the hand one's second portion 39 not utilized on the guide 13 grasp to spin as needed the shank engaged drive-wheel 14 so to spin the shank 33. Note that when the assembly is mounted on a ratchet-driver-tool, such as the tool of FIG. 11, and the tool is used on loose fitted work, just holding the drive-wheel 14 FIG. 7 during return strokes of the rear-shank-handle 27 FIG. 7 will augment the ratcheting action of the driver. Spinning of the drive-wheel 14

will, on any driver fitted with the assembly, further spin the shank if the spinning is applied during normally unproductive return-stroke periods of the driver's rear handle 27 FIG. 7. Continuing to describe the gripwheel operation, when both hands of the operator reach maximum rotated extensions in their respective rotating directions, FIG. 12 OPERATION 2, the operator would release the hand-one second-portion 39 FIG. 12 from gripping upon the drive-wheel, FIG. 12 OPERATION 3, so releasing the drive-wheel 14 and, thereupon, reverse the 37 FIG. 12 OPERATION 3, second hand's rotation of the driver's rear-handle so to rock the handle clockwise, the second hand 37 now continuing the clockwise spin of the shank by clockwise spinning of the rear-handle 27 which is now engaging the shank through the driver's ratchet means. Both the hand one's second-portion which is released away from the drive wheel, along with the hand one's first-portion which remains on the guide, now freely reverse direction bringing along in rotation the slip ring type hand-held-guide 13 which is still held by the hand one first portion and they rock counter clockwise about plus above the clockwise-moving drive-wheel moving as due to linkage through the shank being spun by the second hand's spinning of the driver's rear handle, FIG. 12 OPERATION 4. The hands continue moving in their respective directions until all arrive at their maximum extensions, the starting position FIG. 12 OPERATION 1, whereupon the hands begin another cycle of gripwheel plus driver-tool use.

Referring now to FIG. 1, FIG. 3, FIG. 5A, and FIG. 6, the method of attaching the assembly's drive-wheel half 14 FIG. 3 comprises having the wheel ring a driver-tool's shank to engage the shank 33 FIG. 6. In using the said attachment method, the manner in which the wheel rings the shank to engage the shank can be in either one of two ways, one being ringing the shank to engage the shank by being fixed to the shank, as for example by using 15a FIG.1 a jagged bore through the wheel to be press fitted about the shank fixing the wheel to the shank 33 FIG. 6, but note, the means used to effect the wheel's being fixed to the shank thus to engage the shank can be

278 amy one of many, for example another means would be to adhere the wheel 14 to the shank by
279 glueing or another means would be to have the shank itself expanded to form the drive-wheel
279.1 component. Now referring back to the manner of the wheel's attachment, the other manner in
279.2 which the wheel can ring the shank to engage the shank is to, as while either ringing the shank
279.3 loosely as rotational immediate of the shank or ringing the shank loosely as rotational of the shank
279.4 through way of ringing another component ringing the shank, have the wheel engage the shank
279.5 through linkage by way of a drive-train such as the geared internal drive-train 15D in FIG. 5A.
280 The method of attaching the assembly's slip ring type hand-held-guide 13 FIG. 1 comprises having
281 the guide loosely and discretely girdle the shank of a driver-tool and separate the assembly's drive-
282 wheel so as to result in the guide's being discretely independently freely-able-to-be-spun, unlimited
283 in distance and direction relative the driver's shank as axis for the spin and the assembly's drive-
283.1 wheel as a separate utilized and functioning half of the assembly. In using the said attachment
284 method, the manner in which the guide is enabled to be as said freely spun can be in either one of
285 two ways, one way being to have the guide loosely girdle the shank, immediate of the shank, as for
286 example by utilizing 30 FIG. 1, a bore through the guide used for having the driver's shank, alone,
287 inserted perpendicularly through the bore, the shank loosely fitted so rotational relative the guide;
287.1 and the other way being to have the guide loosely girdle the shank by way of having the shank
287.2 inserted through another component, as for example, by utilizing a bore 30 FIG. 3 through the
287.3 guide, the bore sized and used for having the driver's shank inserted while the shank is also
287.4 inserted perpendicularly through the other component, both inserted perpendicularly as one about
287.5 the other through the bore, the shank still loosely fitted rotational relative the guide, thus the guide
287.6 would be able to be spun freely discretely independently upon the shank. However, the means used
288 to effect having the guide as said able to be spun freely about the shank is only one, that being
289 having the guide attached on the shank as not able to engage the shank rotationally, either in direct

or indirect manner, by having the guide's only contact means with the shank, the bore, configured large enough such that the guide will be loose about the shank, resulting in a complete unbroken separation between the guide and shank, the separation so smooth and circular about the shank as not to enable the guide and shank to engage. And lastly, the method of attaching both the guide and wheel comprises their being linearly retained in their respective locations on the shank as aforesaid functional. In using the said attachment method, the manner in which the guide and wheel are retained can be any of several, but for example, being that the components are already retained on one side relative shank, by way of the driver's handle already being attached there, the components can be retained on the other side relative the shank by means of retainer rings such as 16 and 17 of FIG. 6.

Referring to FIGURES 6 and 12, the operation of the assembly isn't affected by the setting of a driver's ratchet-direction setting means 26 FIG. 6 as the hand is merely lifted off the drive-wheel 14 FIG. 6 during drive-wheel return strokes The hand's operating position and stance being maintained during the lift via anchoring of the hand by griping of the hand's first portion 38 FIG. 12 upon the slip ring type hand-held-guide 13 FIG 6. The hand-held-guide 13 FIG. 6 supports the lifting of hand one's second portion 39 FIG. 12 and the return stroke operation through having been mounted rotationally free yet linearly, as by retainers such as 16 and 17 of FIG.6, fixed relative the shank, the guide being so retained as rotational in location relative the shank, can be spun in concert with any one portion of a hand 38 FIG. 12 gripping it, guiding and freeing any unencumbered second portion of the hand 39 FIG. 12, which doesn't grip upon the guide, to move rotationally as needed, bear down, grip, hold, or grip plus spin the drive-wheel 14 FIG 6.

It should be noted and understood that drawings and descriptions herein are illustrative of the gripwheel assembly's appearance and means both depicted and described herein to effect the

gripwheel's method of attachment are illustrative of types which could be utilized; therefore if a gripwheel assembly's structure is within the scope of the prescribed structure as hereinafter claimed and attachment of the gripwheel components are within the scope of the attachment method as hereinafter claimed, then various materials, colors, and embodiment shapes plus various means to effect attachment of each gripwheel component may be used without departing from the spirit and scope of the invention as hereinafter claimed.